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CORNING INCORPORATED			HOFFMANN, JOHN M	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/941,383  
Filing Date: August 28, 2001  
Appellant(s): BOOKBINDER ET AL.

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Robert Carlson  
For Appellant

**EXAMINER'S ANSWER**

**MAILED**  
SEP 22 2006  
**GROUP 1700**

This is in response to the appeal brief filed 30 September 2005 appealing from the  
Office action mailed 19 January 2005 – as well as the 8-8-2006 remand from the BPAI.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is substantially correct. It indicates that claim 43 is both appealed and cancelled. It is clear from the amendment of 12/27/2004 that claim 43 has been cancelled.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. There was no amendment after final rejection.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

JP2000-44269	KOAIZAWA	02-2000
5,931,984	DROUART	8-1999
4,030,901	KAISER	6-1977
JP02212325	RYOJI	08-1990
6447017	GILBREATH	9-2002
4347069	HANEY	8-1982
5408865	COLLINS	4-1995

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 38-42, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over KOAIZAWA JP2000-44269 (previously referred to as 'SUGIYAMA'), in view of DROUART, KAISER, RYOJI, GILBREATH, HANEY and COLLINS.

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**Claim 1: A furnace assembly for heating an optical waveguide preform, the furnace assembly comprising:**

**a furnace including:**

See figure 11 of Koaizawa.

**a muffle tube defining a furnace passage, the furnace passage having a length extending from a first end to a second end;**

Feature 2 is the muffle tube.

**a top plate mounted and resting on a terminal end of the muffle tube at the second end and an central opening defined in the top plate, said top plate including a lower surface in contact with the terminal end and an upper surface opposite the lower surface; and**

Feature 3' is the top plate that is on the end of the muffle tube.

**a heating device operative to heat the furnace passage;**

Feature 7 is the heating device

**a process gas supply providing a process gas to the furnace passage;**

The unlabeled arrow that is closest to 9 represents the process gas supply.

**a handle disposed in the furnace passage, said handle including a coupling portion which is adapted to hold the waveguide preform and the handle extends through the exit opening',**

Feature 4' is the handle

**a flow shield positioned between the first and second ends and extending across the furnace passage between the handle and the muffle tube, the flow shield arranged and configured**

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**to restrict flow of the process gas from the first end to the second end of the furnace passage;  
and**

First, feature 5 is presumed to be flow shield, because it reduces the cross sectional flow area of the passage. The claim requires that the shield restricts the flow, but gives no indication as to the degree of restriction. When the preform is not in the furnace, it is clear that any upward moving gas, would have its flow restricted when encounters feature 5.

Alternatively: A flow shield is shown as feature 28 of figures 2-3 of Koaizawa. [0034] and [0052] is suggestive of using the same furnace, and thus is suggestive of using feature 28. It is clear that 28 would serve to restrict flow as claimed.

**a washer mounted about the handle, contacting the upper surface of the top plate and covering a portion of the central opening.**

Koaizawa does not teach this. Rather, at [0056] and figures 1-2 and 4-10 Koaizawa teaches to use an O-ring in the top plate, rather than a washer on (contacting) the upper surface.

Ryoji shows it is known to seal muffle tubes by having washers (17, 18) on plates (16a, 16b). Drouart shows the same sort of washer sealing arrangement (feature 7, figures 1-4). And Kaiser shows an o-ring (27 of figure 2) on (not in) the top-plate.

Gilbreath (col. 5, lines 37-51), Haney (col. 1, lines 25-30), and Collins (col. 9, lines, 1-6) are cited as evidence that o-rings and washers are equivalent sealing devices.

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It would have been obvious to replace the o-ring sealing arrangement that Koaizawa discloses with a washer arrangement (i.e. on top of the plate), because (as shown by the six secondary references) such is a conventional sealing arrangement in the optical fiber art, and because such are known equivalents.

**As pointed out in MPEP 2144.06:**

**SUBSTITUTING EQUIVALENTS KNOWN FOR THE SAME PURPOSE**

In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents. In re Ruff, 256 F.2d 590, 118 USPQ 340 (CCPA 1958) (The mere fact that components are claimed as members of a Markush group cannot be relied upon to establish the equivalency of these components. However, an applicant's expressed recognition of an art-recognized or obvious equivalent may be used to refute an argument that such equivalency does not exist.); In re Scott, 323 F.2d 1016, 139 USPQ 297 (CCPA 1963) (Claims were drawn to a hollow fiberglass shaft for archery and a process for the production thereof where the shaft differed from the prior art in the use of a paper tube as the core of the shaft as compared with the light wood or hardened foamed resin core of the prior art. The Board found the claimed invention would have been obvious, reasoning that the prior art foam core is the functional and mechanical equivalent of the claimed paper core. The court reversed, holding that components which are functionally or mechanically equivalent are not necessarily obvious in view of one another, and in this case, the use of a light wood or hardened foam resin core does not fairly suggest the use of a paper core.); Smith v. Hayashi, 209 USPQ 754 (Bd. of Pat. Inter. 1980) (The mere fact that phthalocyanine and selenium function as equivalent photoconductors in the claimed environment was not sufficient to establish that one would have been obvious over the other. However, there was evidence that both phthalocyanine and selenium were known photoconductors in the art of electrophotography. "This, in our view, presents strong evidence of obviousness in substituting one for the other in an electrophotographic environment as a photoconductor." 209 USPQ at 759.).

An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

Claims 2, 5, 11-12, 38, 41-42 are clearly met.

Claim 3: Koaizawa, [0083] indicates that the means-cum-insulating means (of which 28 is one) is between 5-20 mm.

Claim 6 it is deemed that the shield is substantially coupled to the coupling device 5, because the only way to remove the shield is by moving it straight up.

Claim 9: see [0057] of Koaizawa.

Claim 10: see [0036] of Koaizawa.

Claims 39-40: see [0004] of Koaizawa.

Claim 47 is substantially the same as the other claims. However, claim 47 also requires a plurality of washers. It would have been obvious to use multiple washers to have a multiplied sealing effect. Mere duplication of parts is usually not a patentable improvement. Such is known as per Drouart and Ryoji.

Claim 7: see figure 10.

Claim 4, there is no indication as to what the prior ad shield's thickness is. It would have been obvious to have the shield as thick as necessary to prevent gas flow, and yet strong enough to withstand the hot environment.

Claim 8 - see how claim 7 is met above. There is no indication of the spacing. It would have been obvious to make the furnace/preform as large or as small as desired - depending upon how much fiber is desired.

Claim 48 is met for the reasons give above.

#### **(10) Response to Argument**

It is argued that just because the o-rings and washers are mentioned in the same sentence is not sufficient to establish equivalents. The determination of equivalence is not based on the mere location of the terms in a sentence as Appellant argues. Rather



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it is what the sentences say. For example, Gilbreath discloses an "o-ring or equivalent...sealing means" that refers to "annular washers or rings, such as the o-ring".

It is argued that a washer is not an equivalent of an o-ring, because a washer does not have to seal against high pressure. Appellant points to a Webster's dictionary definition which state an o-ring is a "flat ring of synthetic rubber used as a gasket in sealing a joint against high pressures." This is not persuasive. First, Appellant suggests the definition requires that there must be high pressure. But that would result in the bizarre conclusion: as soon as high pressure is removed, the o-ring is no longer an o-ring. Secondly, Koaizawa makes no mention of high pressure, and [0029] teaches to reduce the amount of He. One would recognize that using high pressure when not needed would go against the teachings of Koaizawa. One would infer that one would not use "high pressure". One of ordinary skill viewing the Koaizawa reference realizes that the "o-ring" is not limited to or directed to high pressure sealing. Thus even if the dictionary definition is usually proper in the present field of endeavor, it is clear the Koaizawa is not limited to that definition because such would be inconsistent with the teaching of a o-ring that does not seal against high pressures.

It is argued that even if o-rings and washers can be equivalents, "it is certainly not the case with applicant's claimed invention". However, Examiner could find no evidence (nor explanation nor rationale) in the record to support this conclusion. Examiner could find no evidence or rationale that tends to show that a washer would yield any different result from that of an o-ring.

It is further argued that there is no motivation in the prior art references to use a washer instead of an o-ring. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it is widely known in the sealing art that one can substitute equivalent sealing arrangements – such as the o-ring and washer arrangements in the prior art.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In other words: it does not matter that JP2000-44269 (Koaizawa) does not teach using a washer over the plate. See the rejection (above) which point out the evidence which shows this is a known sealing arrangement in the optical fiber (preform) art.

It is further argued that the intended function (reliable sealing) would be destroyed if one were to use the Ryoji sealing, because Ryoji uses a leaky system. There is no evidence that Ryoji system is leaky, rather Ryoji teaches that the two pressures on either side of washer 18 are different, and that there is "airtightness": this suggests that the washer can prevent transfer of gas. Second, the secondary references contradict Appellant's unsupported conclusion that washers necessarily leak.

It is argued that preform holder (5 of JP2000-44269/Koaizawa) cannot be considered to be a flow shield because it does not function like Appellant's flow shield. And further that preform holder 5 in JP2000-44269 does not extend the furnace "enough" to restrict the flow of a process gas. This is an assertion with no rationale to support it. Anything that reduces the cross-section flow area of a passage would restrict a flow of gas in the passage. If Appellant's position that the feature 5 does not restrict the flow very much, or to the degree that the present invention does: such is irrelevant, because the claims do not require any particular degree of restriction.

Examiner realizes that he could (have arbitrarily concluded) that feature 5 would not read on the flow shield, because it only restricts a small portion (perhaps 5%) of the passage. But Examiner is not permitted to arbitrarily designate how much restriction would read on the claim and how much restriction would not. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). More importantly, as per page 9, lines 14-16 indicate that the gap is only "preferably" no greater than 25 mm. Since Appellant has not amended claim 1 to have the disclosed values of 25 mm (or 12.5 or 2.5) it is presumed that Appellant intends the gap to have no limit – and thus not define over whatever gap that Koaizawa has.

It is further argued that there is no suggestion to combine the flow shield with the figure 1 apparatus of Koaizawa. Examiner disagrees: one would have been motivated to use the Koaizawa flow shield in the prior art device for the advantages Koaizawa discloses.

Regarding claim 2, it is argued that that feature 5 does not form a chamber. It is noted that Appellant has not pointed out why it is not a chamber. As pointed out above, page 9 of Appellant's specification gives no limit to the size of the gap W3: therefore it is presumed that there is no minimum floor size to a "chamber." In other words: Appellant's argument might have merit when one uses a dictionary definition. However, Applicant description suggests that a substantial portion of the floor can be missing. Although there is no reason to expect/assume that the drawings are made to scale: if Appellant's figure 3 were to scale: which has R1 = 25-500 mm, the diameter of the muffle would be around 60-1200mm. Thus if the gap were the 25 mm and the chamber only 60 mm, then the floor would be only 10 mm diameter. Thus the description suggests Applicant's invention may not be limited to any tradition dictionary definition for "chamber". Claims are not read in a vacuum; one has to turn to the specification to see what applicant meant by "chamber". It is clear that Appellant intended the term "chamber" need not have a complete floor. To the degree that Koaizawa's chamber is not a "chamber", the burden is on Appellant to explain why.

Re claim 4: It is further argued that the prior art does not teach a thickness greater than 6 mm. The prior art need not teach a particular dimension this; a change in size is usually an obvious modification:

**From MPEP 2144.04**

**A. Changes in Size/Proportion**

In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case,

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would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Appellant's arguments regarding claims 5, 7 and 8 are correct. However, that only applies to feature 5 not reading on the "flow shield". With the feature 28 of JP2000-44269/Koaizawa flow shield: the claims remain obvious. Appellant does not dispute that 28 is a flow shield.

Regarding the rejections of claims 7, 9, 39 and 40 appellant points out how the specific passages/figures mentioned in the rejection do not contain suggestions to modify the figure 11 of JP2000-44269/Koaizawa. These passages/figures are referred to, so as to show they were invented prior to Appellant's invention thereof. A fair reading of JP2000-44269/Koaizawa is that one can improve preform furnaces (including the furnace of figure 11) by including any of the specific embodiments.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

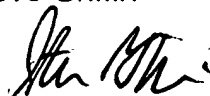
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9-6-06

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